

BOAT USE

Purpose

This Meteorology and Air Quality Group (MAQ) procedure describes the boating and water safety steps that must be followed when conducting the fish sampling activities in selected reservoirs and the Rio Grande, as part of the routine Environmental Surveillance Program to determine background levels of potential environmental contaminants and to detect any above-background concentrations caused by Laboratory activities.

Scope

This procedure applies to the individual(s) assigned to collect fish samples as part of the Foodstuffs Monitoring Program.

In this procedure

This procedure addresses the following major topics:

| Topic | See Page |
|--|-----------------|
| General Information About This Procedure | 2 |
| Who Requires Training to This Procedure? | 2 |
| Worker Safety | 4 |
| Boat Description | 5 |
| Preparing for a Sampling Trip | 6 |
| Towing the boat | 8 |
| At the Sampling Site | 9 |
| Launching and Retrieving the Boat | 10 |
| Records Resulting from This Procedure | 11 |

Signatures

| | |
|---|-----------------------------|
| Prepared by: _____ Phil Fresquez, Soils, Foodstuffs, and Biota Monitoring Team Leader | Date: 5/10/05 |
| Approved by: _____ Terry Morgan, QA Officer | Date: 5/10/05 |
| Work authorized by: _____ Dave Fuehne, Acting MAQ Group Leader | Date: 5/10/05 |

05/12/05

CONTROLLED DOCUMENT

This copy is uncontrolled if no red stamp is present on printed copies.
Users are responsible for ensuring they work to the latest approved revision.

General information about this procedure

Attachments This procedure has the following attachments:

| Number | Attachment Title | No. of pages |
|--------|------------------|--------------|
| 1 | Hazard Review | 1 |

History of revision

This table lists the revision history and effective dates of this procedure.

| Revision | Date | Description Of Changes |
|----------|----------|---|
| 0 | | Revision number not used. |
| 1 | ? | New document, issued as ESH-8 group procedure. |
| 2 | 8/89 | Update of procedure. |
| 3 | 10/91 | Update of procedure. |
| 4 | 5/93 | Update of procedure. |
| 5 | ? | Revised into new format, process updated. |
| 0 | 10/4/96 | New document, issued as ECO group procedure. |
| 1 | 3/99 | Reformatted in accordance with LIR300-00-01, Safe Work Practices. |
| 2 | 4/01 | Added new Section 9.0, Training |
| 3 | 4/02 | Change in directorate. |
| 4 | 4/03 | Team name change to Environmental Surveillance. |
| 5 | 5/12/04 | Updated and reformatted document to conform with MAQ procedures. |
| 6 | 05/11/05 | Converted HCP to HR and removed references to raft and electroshocking. |

Who requires training to this procedure?

The following personnel require training before implementing this procedure:

- MAQ personnel who use or travel in the boat in rivers or lakes.

Training method

The training method for this procedure is **on-the-job** training by a previously-trained individual and is documented in accordance with the procedure for training (MAQ-024).

Annual retraining is required and will be by self-study (“reading”) training.

General information, continued

Prerequisites In addition to training to this procedure, the following training is also required prior to performing this procedure:

- First Aid
- Cardiopulmonary Resuscitation (CPR)
- RRES-ES-Field, “General Field Safety for All Employees”
- RRES-ES-Driving, “Driving and Towing Safety for All Employees”

At least one person in the crew must have the following training:

- New Mexico Boating Safety Class

All personnel must know how to swim.

**Definitions
specific to this
procedure**

None.

References

The following documents are referenced in this procedure:

- MAQ-024, “Personnel Training”
- MAQ-026, “Deficiency Reporting and Correcting”
- MAQ-702, “Fish Sampling”
- RRES-ES-Field, “General Field Safety for All Employees”
- RRES-ES-Driving, “Driving and Towing Safety for All Employees”

Note

Actions specified within this procedure, unless preceded with “should” or “may,” are to be considered mandatory guidance (i.e., “shall”).

Worker safety

Precautions and limitations

This document establishes the basic requirements for boat safety and applies to all personnel performing activities described in this document.

Safe work practices requirements

Re-review the steps in the procedures RRES-ES-Field and RRES-ES-Driving.

Project Personnel - a minimum of three people is required to go out in the boat.

Stormy weather - Reschedule or delay work activities as necessary to avoid severe or dangerous weather. High winds and high waves could cause the boat to be swamped or to capsize. Lightning is an extreme threat to personnel on or in the water – if lightning is observed at any distance, start moving off the lake.

Do not perform work under conditions you consider unsafe. Before beginning work described in this procedure, review safety needs and requirements, identify hazards, and develop hazard mitigation measures.

Boat description

Boat description

The group currently uses an 18.5-ft pontoon boat with a 75-hp Mercury Marina motor for fish sampling. The boat has a seven-passenger/990-pound capacity. The boat is transported on a single-axle trailer equipped with running lights and requires a 2-in. ball for towing.

Boat equipment needed

The following equipment is required for using the boat:

- radio, cellular phone, or other radio/telephone
- Coast Guard-approved life jackets for everyone on board
- life ring with 30 ft of rope
- oars
- distress whistle
- adequate fuel
- fire extinguisher
- spare prop and tools to change
- tool box with commonly needed tools for the boat and motor

Preparing for a sampling trip

Preparing for a trip

At least two trained or experienced people are required for the boat. At least one person must be experienced in towing and backing trailers and in loading and unloading the boat at the water. All participants must know how to swim and must wear life jackets at all times while on board the boat. Bring sunscreen, rain/ wind gear, and extra clothing in case some gets wet.

Personnel should be familiar with all applicable New Mexico boating regulations.

Ensure that the boat is in good running condition and has been inspected. Ensure that the hitch safety chains are in good condition and that the running lights work.

Collect the equipment listed above and other equipment needed for the sampling to be performed.

Ensure that the weight of the personnel and equipment does not exceed the boat capacity (970 lbs for the boat).

Before leaving for the field

Vehicle - Check the condition of the vehicle and the fuel level.

Check the Weather - Check the weather forecast the morning of the sampling trip. If high winds (>20 mph), rain, and/or thunderstorms are predicted, STAY OUT OF THE WATER.

Check the Boat Equipment - Check the following items:

- Ensure that the boat has new gas (eliminates engine problems).
 - Check oil injector level.
 - Ensure that the battery is charged.
 - Ensure that drain plug is in boat.
 - Check pontoon for any major damage (i.e., holes or big dents). Air pressure of pontoons should be at ~2-1/2 psi.
-

Departure and itinerary

Before departure, inform the group office of your destination and estimated time of return. For multi-day trips, leave a detailed itinerary and the plans for checking in periodically. When leaving Los Alamos County you must be placed on official Laboratory travel status. If your time of return will be after 4:30 p.m., make arrangements to check in with your supervisor when you return.

Preparing for a sampling trip, continued

Fuel safety

When refueling: Only do refueling OUTDOORS and AFTER the engine has cooled for at least 5 minutes. Carry gas in approved safety gas cans -- MAXIMUM 8 gallons -- only in outside beds of vehicles, or in trailer if fuel lines disconnected. Wear safety glasses when refueling. Check engine oil at each refueling. Leave MAX of 17 oz in engine fuel tank.

When filling gas cans: Always put the can ON THE GROUND when adding gas. Cans in the bed of a truck, especially one with a bed liner, are often not grounded and a spark can occur between the gas nozzle and the can. Many fires have occurred this way.

Towing the boat

Towing vehicle

Re-review the chapter on towing in RRES-ES-Driving. Ensure the vehicle you plan to use to tow is rated to tow the weight of the boat (about 1600 lbs plus trailer). Ensure it has a proper trailer hitch and the correct trailer ball (2"). Always use the safety chains; cross them to attach to hitch.

Hooking and unhooking trailer

Chock **BOTH** trailer wheels before raising the trailer tongue to hook or unhook the trailer from the vehicle. Keep hands and fingers clear and watch for sudden movement. Always use crank tongue lift to raise and lower tongue; remember to swing it to horizontal before towing.

WARNING: As the hitch comes off the ball, the trailer may move. Stand away a foot or more and be ready to move.

Towing

Use extra caution when towing: assume longer stopping distances, use mirrors when changing lanes, be aware of the extra width and length of the vehicle.

At the sampling site

While at the lake or river

Notify reservoir officials of your arrival and departure.

Before boarding the boat, hold a brief safety meeting.

Stay seated while boat is in motion.

Wear life jackets at all times when in the boat.

Watch for developing weather

Watch for developing dark clouds and plan to leave the lake immediately if dark clouds form. If any lightning is observed within 20 miles, leave the lake immediately.

Watch for sudden wind gusts that accompany formation of dark clouds. Be aware of how easily the boat is pushed by the wind and plan accordingly.

In case of emergency

Injury - Administer appropriate first aid and provide appropriate transportation of injured person to Occupational Medicine Group medical station or hospital. Medical examination of Laboratory employees by the Occupational Medicine Group is mandatory for work-related injuries. Contractor employees must go to the nearest private hospital.

Notify the reservoir authorities and the group office in a timely fashion. The **group leader** will notify the Safety & Risk Assessment Group and the health and safety division office or the Emergency Management Office (EMO) at 667-6211. If the injury occurred in a vehicle accident, the group office also notifies the local police department

Boating Accident - Notify the reservoir authorities and the group office in a timely fashion. The group leader will notify appropriate Laboratory organizations such as the division office or the Laboratory Emergency Response Coordinator.

Overdue Personnel – Follow the steps in the procedure RRES-ES-Field.

Launching and retrieving the boat

Steps to launch the boat

To launch the boat, perform the following steps:

| Step | Action |
|------|--|
| 1 | Inspect all safety equipment and make sure every piece is accounted for. Equipment is listed in previous chapters <i>Preparing for a sampling trip</i> and <i>Boat descriptions</i> . |
| 2 | Remove the tie downs from the boat. |
| 3 | Operator puts on approved life vest and gets into boat. |
| 4 | Driver backs the trailer down the ramp until the trailer bunks are under the water. |
| 5 | Operator starts the outboard motor and allows to warm up. |
| 6 | Driver unhooks the safety chain from the bow of the boat. |
| 7 | Driver removes the winch hook from the bow of the boat. |
| 8 | Operator shifts the outboard engine into reverse and powers off the trailer. (If the boat will not back off the trailer, backing the trailer further into the water may be necessary.) |

Steps to retrieve the boat

To retrieve the boat, perform the following steps:

| Step | Action |
|------|---|
| 1 | Driver backs the trailer into the water to the same depth that was sufficient to float the boat when launching. |
| 2 | Operator passes safety line from boat to second person on shore. |
| 3 | Operator drives the boat carefully onto the trailer. |
| 4 | Attach winch chain and pull boat onto trailer. |
| 5 | Shut off engine and properly secure it for transport. |
| 6 | Attach all safety straps and tie-downs. |

Records resulting from this procedure

Records

There are no records generated as a result of this procedure.

HAZARD REVIEW FOR BOAT SAFETY

| Work tasks/Steps | Hazards, Concerns, and Potential accidents; Likelihood/ Severity | Controls, Preventive Measures (e.g., safety equipment, administrative controls, etc.) | Hazard Level from IMP 300-00-00 Hazard Grading Matrix |
|--|--|--|---|
| Task: Use boat as described in this procedure. | <p>Boat accidents—improbable/catastrophic = medium</p> <p>Drowning—improbable/catastrophic = medium</p> <p>Weather—Lightning—remote/catastrophic = low</p> | <p>Boat accidents—Review a copy of the "New Mexico Better Boating and Regulations" (published by the New Mexico Parks and Recreation Bureau of Boating Safety).</p> <p>Drowning—All participants must know how to swim and must wear life jackets at all times while on board the boat.</p> <p>Leave the lake immediately when lightning is approaching.</p> | Low |

Wastes or residual materials resulting from process

None.

Emergency actions to take in event of control failure

For all injuries, provide first aid and see that injured person is taken to Occupational Medicine (only if immediate medical attention is not required) or the nearest hospital. Notify supervisor and group office as soon as possible.